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Aspects of hernia surgery in Wales

D E Boyce MB BCh
Senior Surgical SHO

A A Shandall MCh FRCS
Consultant Surgeon

Royal Gwent Hospital, Newport

D L Crosby OBE FRCS
Consultant Surgeon

University Hospital of Wales, Cardiff

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The management of elective inguinal herniorrhaphy in Wales was assessed by means of a postal survey of consultant general surgeons. This included technique of repair, length of inpatient stay, follow-up, use of heparin thromboprophylaxis and advice regarding driving, strenuous activities and work. In all, 54 replies (77%) were received.

The views of patients on their surgery was assessed by a questionnaire sent to 80 patients treated on a single surgical unit; 60 replies (75%) were received. Waiting times were relatively short among this group, 67.5% of patients being treated within 6 months of seeking medical advice; 16.25% suffered a complication. All wound infections occurred after discharge and 15% of patients had some groin discomfort 6 months after operation.

Accuracy of clinical examination of 50 inguinal hernias by different grades of surgeon was assessed. Consultants were significantly more accurate when compared with house officers ($P < 0.001$).

There is a wide range of repair techniques and postoperative advice practised by consultant general surgeons in Wales. Patients' main complaint was that of a sparsity of postoperative advice, although there also appears to be an appreciable postoperative morbidity. Clinical experience plays a significant role in assessment of the suitability of hernias for surgery.

Correspondence to: Dr D E Boyce, Department of General Surgery, University Hospital of Wales, Heath Park, Cardiff CF4 4XW

Adult inguinal herniorrhaphy is the most frequently performed operation in general surgery *(1)*. Of the adult population, 3% will undergo surgical treatment for inguinal hernia *(2)*. Current methods of hernia surgery in Wales were assessed by a questionnaire and compared with the recent guidelines on hernia surgery recommended by The Royal College of Surgeons of England *(3)*. Recent trends have urged surgeons towards day case surgery. Hence, we looked at post-discharge morbidity, patients' views on their length of inpatient stay, and on their surgery as a whole. The increasing popularity of using mesh in hernia surgery may lead to a need for more accurate preoperative assessment on whether a hernia is indirect or direct, since this may have some bearing on the nature of surgical treatment. In addition, some surgeons would operate on indirect hernias in elderly patients, but not on direct ones. As it is generally thought that the grade of examiner bears little relation to the clinical accuracy of examination of inguinal hernias, we have put this to the test.

Methods

The study falls into three limbs:

1 Each consultant general surgeon in Wales was sent a short questionnaire in early 1992. It questioned management of routine inguinal hernia surgery, including repair technique, materials used for the repair, length of inpatient stay, methods of follow-up and postoperative advice.
2 A postal survey of 80 patients having undergone inguinal surgery on a single surgical unit (in a teaching hospital) was undertaken. Length of time

before initially seeking medical advice, before seeing a surgeon, before surgery itself, duration of hospital stay, and time before returning to normal activities were noted. Follow-up, nature of postoperative advice, and any further comments were also recorded.

3 A blind study of the accuracy of examination of 50 inguinal hernias by different grades of observer was conducted, and compared with eventual operative findings. The significance of accuracy of examination of each grade of doctor was tested by means of a χ^2 test.

Results

Consultant questionnaire

In all, 54 (77%) of the consultants responded. Techniques of repair are shown in Table I. Almost all surgeons used a non-braided monofilament synthetic suture for the repair, but 4 (7.4%) were still using silk (Table II). Advocated inpatient stay (Table III) was mainly 1 or 2 nights (range 0–4 nights) and 48% reviewed their uncomplicated hernias routinely in the outpatient department; another surgeon (1.8%) did so for research purposes. Six (11.5%) used subcutaneous heparin routinely for all their hernia repairs, the dose varying between a single dose preoperatively to 5000 IU thrice daily for the duration of the hospital stay. A further 5 (9.1%) used heparin routinely for patients older than 40 years. The great variability of postoperative advice is shown in Fig. 1.

Patient postal survey

The median time before seeking medical advice was 8 weeks (range 1 day–30 years), with a mean delay of 6 weeks (range 1–24 weeks) after this before seeing the surgeon. Of the patients, 60% sought advice because of groin pain, 30% because of groin swelling, and 10% because of both symptoms. Total time between seeking medical advice and eventual surgical treatment had a mean of 4.5 months (range 0.75–32 months) with 67.5% of patients treated surgically within 6 months.

Complications of surgery while in hospital were retention of urine (3), scrotal haematoma (2) and deep vein thrombosis (2). Six wound infections were reported after discharge. Of respondents, 15% still experienced groin discomfort 6 months after surgery, and 10% thought they were discharged too soon, despite a mean inpatient stay in our study group of 3.2 nights (range 2–6 nights). In all, 67% received an outpatient appointment. There were no reported recurrences at the time of our study.

Table I. Repair technique

Technique	*n*	*%*
Bassini or modification	19	35
Darn	13	24
Shouldice or modification	11	20
Bassini with Tanner slide	6	11
50% Bassini/50% Shouldice	2	3.7
Indirect—darn/Direct—Shouldice	1	1.8
Halstead	1	1.8
Illegible	1	1.8

Table II. Materials used for repair

Material	*n*	*%*
Monofilament nylon	33	61
Prolene	9	16.5
Loop nylon	7	13
Silk	2	3.7
Silk/nylon	2	3.7
Nuralon	1	1.8

Table III. Length of inpatient stay

Length of stay	*n*	*%*
2 Nights	22	40.7
1 Night	20	37
3 Nights	9	16.6
4 Nights	2	3.7
Day case	1	1.8

Comparison of clinical assessment with operative findings

Success in clinical prediction of inguinal hernia type (indirect, direct or combined) by consultants was 41 (82%), registrar or senior registrar 33 (66%), senior house officer 31 (62%) and house officer 27 (54%) when compared with operative findings. On analysis using the χ^2 test, consultants were significantly more accurate than registrar or senior registrar ($P = 0.05$), senior house officer ($P < 0.05$) and house officer ($P < 0.001$).

Discussion

A number of important points arise from this study. The most common repairs used by consultant surgeons in

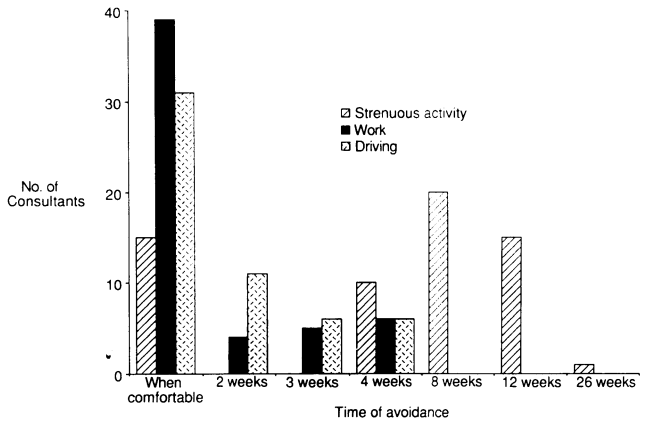

Figure 1. Variability in postoperative advice.

Wales are the 'Bassini' and the darn, with only one-fifth routinely performing a Shouldice type repair. Optimum repair techniques remain controversial, but the 'gold standard' appears to be that of the Shouldice Clinic, with a 5-year recurrence rate or less than 1% *(4)*. One might argue that surgeons devoted to the repair of hernias are bound to have minimal rates of recurrence, but similar results have been achieved in the UK by Devlin *(5)*. Such techniques, which involve division of the cremaster, primary incision and repair of the transversalis fascia, and apposition and suturing without tension are those recommended in the recent guidelines of The Royal College of Surgeons of England *(3)*. Techniques incorporating mesh are also gaining popularity because of similar low recurrence rates *(6,7)*. Recurrence rates of less than 1% have also been achieved with the French 'Stoppa' technique, which buttresses any defect in the transversalis fascia with a large piece of preperitoneal mesh. No better figures have been demonstrated with any other technique; studies by Lifshutz and Juler *(8)* using a darn operation have shown 5-year recurrences of over 10%. Bassini's original 5-year recurrence rate was 2.8%, but the 'Bassini' repair used by modern surgeons is rarely the same as that advocated by Bassini, where the divided transversalis fascia is sutured as well as the conjoint tendon to the inguinal ligament.

Multistrand materials should be avoided in herniorrhaphy because of increased risks of infection and sinus formation. As expected, therefore, few surgeons in our survey used anything but a monofilament synthetic suture. It is considered essential by most surgeons that these synthetics should be non-absorbable as they need to maintain their full strength for at least 60 days while the tissues of the inguinal region become sturdy enough to prevent recurrence while healing occurs *(9)*.

In 1985 The Royal College of Surgeons of England recommended that one-third of adult male inguinal herniorrhaphies should be treated as day cases *(10)*. This has been reiterated in a more recent report *(3)*. It was surprising, therefore, to find that only one respondent in our survey operated on hernias routinely as day cases. Routine length of stay was mainly 1 or 2 nights (range 0–4 nights). These figures appear to reflect the situation in the rest of the UK *(11)*.

In our survey of patients, total time between seeking medical advice and eventual surgical treatment was very favourable when compared with national figures. It must be stressed, however, that these figures have been obtained from patients treated on a single surgical unit within a teaching hospital. Complications were frequent, with all wound infections occurring after discharge, and no record of them being found in the hospital notes. Such complications, as well as the appreciable number of patients still experiencing groin discomfort after surgery, represent a degree of hidden morbidity after hernia surgery previously pointed out by other authors *(12)*.

Two patients (3.3%) suffered a deep venous thrombosis (DVT) as a result of their hernia surgery. However, only 6 (11.4%) consultants advocated routine subcutaneous heparin in addition to other preventive measures such as elastic compression stockings and intermittent pneumatic calf compression. Complications have been noted with the use of heparin *(13)*, but these complications are relatively minor when compared with the risks of thromboembolism. Perhaps, therefore, heparin prophylaxis should be used more frequently.

A common criticism raised by the patients in our survey was that of a lack of discharge advice from medical staff. Our survey of consultant surgeons has shown a great variability of advice when it is given. Perhaps such advice needs to be standardised; in particular, driving should be avoided for at least 10 days, not because of risk of recurrence, but because of delayed reaction time in the affected limb *(14)*. However, many surgeons do not agree with this instruction and many patients ignore it!

The mean accuracy of examination of inguinal hernias was 66%. It is generally thought that direct hernias are less likely to strangulate *(15)*. Indeed, some authors state that the repair of direct hernias in elderly patients may not be necessary because of the low risk of strangulation *(16)*. However, this study shows that clinical examination is only accurate in two out of every three patients. Even in the hands of the most experienced clinician, one out of every five hernias will be assessed inaccurately.

Conclusion

Inguinal herniorrhaphy remains one of the most common procedures performed by general surgeons. The variability of approach to this condition by surgeons in Wales reflects that in the rest of the UK *(11)*. Advances in laparoscopic techniques have produced yet another surgical option. However, the long-term benefits of this technique are yet to be proven. All current literature, including the recent guidelines put forward by The Royal College of Surgeons of England, point to either the Shouldice or the Lichtenstein type repair with polypropylene mesh as being the optimum operations for inguinal hernias. However, these remain the repair of choice for a relative minority of surgeons. It will be interesting to find whether the guidelines of The Royal College will have some impact in this respect—perhaps a further similar survey of consultants will show a more uniform pattern of repair techniques.

Surgeons have shown a large variability in discharge advice, and patients have commented on its sparsity. A standardised discharge advice form such as that proposed in The Royal College of Surgeons of England guidelines should be useful in this respect *(3)*.

Contrary to the consensus of thought, we have shown a statistically significant gradient in clinical accuracy of examination of inguinal hernias when compared with the experience of the examining doctor. Bearing in mind that indirect hernias are more likely to strangulate, the accurate assessment of hernias bears relevance to surgeons as well as being an academic test for students. It appears that clinical experience has a significant influence on this accuracy.

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